

45

SEQUENCE LISTING



<110> OOKURA, TETUYA

KASUMI, TAKAFUMI

ASABA, EIJI

<120> ERYTHROSE REDUCTASE, ITS cDNA AND CELL WHICH THE cDNA EXPRESS

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<141> 2002-01-09

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<151> 2001-03-08

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Ser Val Lys Asn Ala Val Lys Ala Gly Tyr Arg His Leu Asp Leu Ala	
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aaa gtg tac caa aac caa tcg gaa att gga gta gca ctt cag gaa ctg	192
Lys Val Tyr Gln Asn Gln Ser Glu Ile Gly Val Ala Leu Gln Glu Leu	
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Phe Asp Gln Gly Ile Val Lys Arg Glu Asp Leu Phe Ile Thr Ser Lys	
65 70 75 80	
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Val Trp Asn Asn Arg His Ala Pro Glu His Val Glu Pro Ala Leu Asp	
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gaa aca ttg aaa gaa ctt gga ttg tcc tac ttg gat ttg tac ttg att	336
Glu Thr Leu Lys Glu Leu Gly Leu Ser Tyr Leu Asp Leu Tyr Leu Ile	
100 105 110	
cat tgg ccc gtt gcg ttc aag ttt act acg cct caa gaa cta ttc cct	384
His Trp Pro Val Ala Phe Lys Phe Thr Thr Pro Gln Glu Leu Phe Pro	
115 120 125	
act gag ccg gat aac aag gaa ttg gcc gcg att gat gat tca atc aag	432
Thr Glu Pro Asp Asn Lys Glu Leu Ala Ala Ile Asp Asp Ser Ile Lys	
130 135 140	
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Leu Val Asp Thr Trp Lys Ala Val Val Ala Leu Lys Lys Thr Gly Lys	
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165 170 175	
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cac cca ttg tta caa cag gat gaa ttg gtt gct cat cac aag agt aaa	624
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225 230 235 240	
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260 265 270	
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Asn Tyr Asp Gln Ile Thr Leu Ser Pro Glu Glu Phe Gln Lys Val Thr	
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Asp Leu Ile Lys Glu Tyr Gly Glu Ser Arg Asn Asn Ile Pro Leu Asn	
290 295 300	
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Tyr Lys Pro Ser Trp Pro Ile Ser Val Phe Gly Thr Ser Asp Glu Ala	
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Lys Val Tyr Gln Asn Gln Ser Glu Ile Gly Val Ala Leu Gln Glu Leu
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Phe Asp Gln Gly Ile Val Lys Arg Glu Asp Leu Phe Ile Thr Ser Lys
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Val Trp Asn Asn Arg His Ala Pro Glu His Val Glu Pro Ala Leu Asp
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Glu Thr Leu Lys Glu Leu Gly Leu Ser Tyr Leu Asp Leu Tyr Leu Ile
100 105 110

His Trp Pro Val Ala Phe Lys Phe Thr Thr Pro Gln Glu Leu Phe Pro
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Thr Glu Pro Asp Asn Lys Glu Leu Ala Ala Ile Asp Asp Ser Ile Lys
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Leu Val Asp Thr Trp Lys Ala Val Val Ala Leu Lys Lys Thr Gly Lys
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Val Glu Lys Ala Ser Gly Glu Arg Pro Ala Val Asn Gln Ile Glu Ala
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His Pro Leu Leu Gln Gln Asp Glu Leu Val Ala His His Lys Ser Lys
195 200 205

Asn Ile Val Ile Thr Ala Tyr Ser Pro Leu Gly Asn Asn Val Ser Gly
210 215 220

Lys Pro Pro Leu Thr Gln Asn Pro Gly Ile Glu Ala Thr Ala Lys Arg
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Leu Asn His Thr Pro Ala Ala Val Leu Leu Ala Trp Gly Ile Gln Arg
245 250 255

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260 265 270

Asn Tyr Asp Gln Ile Thr Leu Ser Pro Glu Glu Phe Gln Lys Val Thr
275 280 285

Asp Leu Ile Lys Glu Tyr Gly Glu Ser Arg Asn Asn Ile Pro Leu Asn
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gct ctt ggg tac ggt acc tgg caa gca gaa cct ggt cag gtc ggt gaa	96
Ala Leu Gly Tyr Gly Thr Trp Gln Ala Glu Pro Gly Gln Val Gly Glu	
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Gly Val Lys Leu Ala Val Lys Ala Gly Tyr Arg His Leu Asp Leu Ala	
35 40 45	
aaa gta tac cag aac caa acc gag att ggc caa gct ctc aag gaa ctg	192
Lys Val Tyr Gln Asn Gln Thr Glu Ile Gly Gln Ala Leu Lys Glu Leu	
50 55 60	
ttt gat gag ggt gtt gtc aag cgt gag gac ctt ttc atc act tcc aag	240
Phe Asp Glu Gly Val Val Lys Arg Glu Asp Leu Phe Ile Thr Ser Lys	
65 70 75 80	
ctt tgg aac aac cgc cac gct cct gag cac gtt gag cct gcg ctc gac	288
Leu Trp Asn Asn Arg His Ala Pro Glu His Val Glu Pro Ala Leu Asp	
85 90 95	
gag act ctt aag gag ttg ggt cta tcc tat ttg gac ctg tac ttg att	336
Glu Thr Leu Lys Glu Leu Gly Leu Ser Tyr Leu Asp Leu Tyr Leu Ile	
100 105 110	
cac tgg cct gtt gct ttc aag ttc act act ccc gat gaa ctg ctt cct	384
His Trp Pro Val Ala Phe Lys Phe Thr Thr Pro Asp Glu Leu Leu Pro	
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130 135 140	
ttg tcc gac acc tgg aag gcg gtc gtc gcc ctg aaa aag acg ggt aag	480
Leu Ser Asp Thr Trp Lys Ala Val Val Ala Leu Lys Lys Thr Gly Lys	
145 150 155 160	
acc aag tcg gtt ggt gtt tcg aac ttc agc act cgt ctg gtc gac ttg	528
Thr Lys Ser Val Gly Val Ser Asn Phe Ser Thr Arg Leu Val Asp Leu	
165 170 175	

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cac ccc ttg ttg caa caa gac gag ttg gtt gct cac cat aag agc aag His Pro Leu Leu Gln Gln Asp Glu Leu Val Ala His His Lys Ser Lys 195 200 205	624
aac att gtc atc act gct tac agt ccc ttg ggc aac aat gtc gct ggt Asn Ile Val Ile Thr Ala Tyr Ser Pro Leu Gly Asn Asn Val Ala Gly 210 215 220	672
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ctg aac cat act cct gct gct gtg ctc att gct tgg ggt att caa cgc Leu Asn His Thr Pro Ala Ala Val Leu Ile Ala Trp Gly Ile Gln Arg 245 250 255	768
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Gly	Val	Lys	Leu	Ala	Val	Lys	Ala	Gly	Tyr	Arg	His	Leu	Asp	Leu	Ala	
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Lys	Val	Tyr	Gln	Asn	Gln	Thr	Glu	Ile	Gly	Gln	Ala	Leu	Lys	Glu	Leu	
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Phe	Asp	Glu	Gly	Val	Val	Lys	Arg	Glu	Asp	Leu	Phe	Ile	Thr	Ser	Lys	
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Leu	Trp	Asn	Asn	Arg	His	Ala	Pro	Glu	His	Val	Glu	Pro	Ala	Leu	Asp	
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Glu	Thr	Leu	Lys	Glu	Leu	Gly	Leu	Ser	Tyr	Leu	Asp	Leu	Tyr	Leu	Ile	
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His Pro Leu Leu Gln Gln Asp Glu Leu Val Ala His His Lys Ser Lys
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Asn Ile Val Ile Thr Ala Tyr Ser Pro Leu Gly Asn Asn Val Ala Gly
210 215 220

Lys Pro Pro Leu Thr Glu Asn Pro Gly Ile Val Asp Ala Ala Lys Arg
225 230 235 240

Leu Asn His Thr Pro Ala Ala Val Leu Ile Ala Trp Gly Ile Gln Arg
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Gly Tyr Ser Val Leu Val Lys Ser Val Thr Pro Ser Arg Ile Lys Ser
260 265 270

Asn Phe Glu Gln Ile Thr Leu Ser Asp Glu Glu Phe Gln Arg Val Thr
275 280 285

Asn Leu Ile Lys Glu Tyr Gly Glu Ser Arg Asn Asn Val Pro Phe Asn
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Gly	Val	Lys	Leu	Ala	Val	Lys	Ala	Gly	Tyr	Arg	His	Leu	Asp	Leu	Ala	
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Lys	Val	Tyr	Gln	Asn	Gln	Thr	Glu	Ile	Gly	Gln	Ala	Leu	Lys	Glu	Leu	
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gag	act	ctt	aag	gag	ctg	ggt	cta	tcc	tat	ctg	gac	ctg	tac	ttg	att	336
Glu	Thr	Leu	Lys	Glu	Leu	Gly	Leu	Ser	Tyr	Leu	Asp	Leu	Tyr	Leu	Ile	
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Thr	Lys	Ser	Val	Gly	Val	Ser	Asn	Phe	Ser	Thr	Arg	Leu	Val	Asp	Leu	
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gtt	gag	gaa	gct	tcg	ggc	gaa	cgt	cct	gcg	gta	aac	cag	atc	gaa	gct	576
Val	Glu	Glu	Ala	Ser	Gly	Glu	Arg	Pro	Ala	Val	Asn	Gln	Ile	Glu	Ala	
			180					185					190			

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His Pro Leu Leu Gln Gln Asp Glu Leu Val Ala His His Lys Ser Lys	
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Asn Ile Val Ile Thr Ala Tyr Ser Pro Leu Gly Asn Asn Val Ala Gly	
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Lys Pro Pro Leu Thr Glu Asn Pro Gly Ile Val Asp Ala Ala Lys Arg	
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Leu Asn His Thr Pro Ala Ala Val Leu Ile Ala Trp Gly Ile Gln Arg	
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ggg tac agc gtc ttg gtc aag tca gtt aca ccc tca cgg atc aag agt	816
Gly Tyr Ser Val Leu Val Lys Ser Val Thr Pro Ser Arg Ile Lys Ser	
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aac ctc atc aag gag tac ggt gag agc cgt aac aac gtt cct ttc aat	912
Asn Leu Ile Lys Glu Tyr Gly Glu Ser Arg Asn Asn Val Pro Phe Asn	
290 295 300	
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Tyr Lys Pro Ser Trp Ser Ile Asp Val Phe Gly Thr Gln Asp Glu Ala	
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Lys Ala Thr His Lys Ile Asn Ala	
325	
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Gly	Val	Lys	Leu	Ala	Val	Lys	Ala	Gly	Tyr	Arg	His	Leu	Asp	Leu	Ala	35	40	45	
Lys	Val	Tyr	Gln	Asn	Gln	Thr	Glu	Ile	Gly	Gln	Ala	Leu	Lys	Glu	Leu	50	55	60	
Phe	Asp	Glu	Gly	Val	Val	Lys	Arg	Glu	Asp	Leu	Phe	Ile	Thr	Ser	Lys	65	70	75	80
Leu	Trp	Asn	Asn	Arg	His	Ala	Pro	Glu	His	Val	Glu	Pro	Ala	Leu	Asp	85	90	95	
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His	Trp	Pro	Val	Ala	Phe	Lys	Phe	Thr	Thr	Pro	Asp	Glu	Leu	Leu	Pro	115	120	125	
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Thr	Lys	Ser	Val	Gly	Val	Ser	Asn	Phe	Ser	Thr	Arg	Leu	Val	Asp	Leu	165	170	175	
Val	Glu	Glu	Ala	Ser	Gly	Glu	Arg	Pro	Ala	Val	Asn	Gln	Ile	Glu	Ala	180	185	190	
His	Pro	Leu	Leu	Gln	Gln	Asp	Glu	Leu	Val	Ala	His	His	Lys	Ser	Lys	195	200	205	

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Gly	Tyr	Ser	Val	Leu	Val	Lys	Ser	Val	Thr	Pro	Ser	Arg	Ile	Lys	Ser
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Tyr	Lys	Pro	Ser	Trp	Ser	Ile	Asp	Val	Phe	Gly	Thr	Gln	Asp	Glu	Ala
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